

The 6th International Conference on Rough Sets and Knowledge Technology

RSKT 2011 Program at a Glance

Oct 9	18:30-21:00	Reception (Lynx Salon)		
Oct 10	8:30-9:00	Opening Ceremony (Summit)		Chair: JingTao Yao
	9:00-9:40	Keynote Speech (Summit)	Witold Pedrycz	Chair: Guoyin Wang
	9:40-10:20	Keynote Speech (Summit)	Jiye Liang	Chair: Sheela Ramanna
	10:20-10:50	Coffee Break (Alpine Meadows)		
	10:50-12:30 (100 mins)	Session S1 (Summit) Chair: <i>Jerzy Blaszczynski</i> Generalized Rough Set Models	Session A1 (Assiniboine) Chair: <i>Pawan Lingras</i> Advances in Granular Computing 2011(I)	Session B1 (Black Bear) Chair: <i>Krzysztof Pancierz</i> Rough Sets in Process Mining
	12:30-14:00	Lunch Break		
	14:00-15:40 (100 mins)	Session S2 (Summit) Chair: <i>Tianrui Li</i> Attribute Reduction and Feature Selection	Session A2 (Assiniboine) Chair: <i>Yiyu Yao</i> Advances in Granular Computing 2011(II)	Session B2 (Black Bear) Chair: <i>Marcin Wolski</i> Near Sets
	15:40-16:10	Coffee Break (Alpine Meadows)		
16:10-17:50 (100 mins)	Session S3 (Summit) Chair: <i>Jian Yu</i> Machine Learning with Rough and Hybrid Techniques	Session A3 (Assiniboine) Chair: <i>Yanping Zhang</i> Advances in Granular Computing 2011(III) and Quotient Space	Session B3 (Black Bear) Chair: <i>Masahiro Inuiguchi</i> Intelligent Systems and Applications (I)	
Oct 11	9:00-9:40	Keynote Speech (Summit)	James F. Peters	Chair: Zbigniew Suraj
	9:40-10:20	Keynote Speech (Summit)	Jerzy W. Grzymala-Busse	Chair: Roman Slowinski
	10:20-10:50	Coffee Break (Alpine Meadows)		
	10:50-12:30 (100m)	Session S4 (Summit) Chair: <i>Hidenao Abe</i> Knowledge Technology	Session A4 (Assiniboine) Chair: <i>Fan Min</i> Intelligent Systems and Applications (II)	Session B4 (Black Bear) Chair: <i>Hong Yu</i> Decision-Theoretic Rough Set Model
	12:30-14:00	Lunch Break		
	14:00-14:40	Invited Tutorial (Summit) Sarjerao Nimse, Pawan Lingras and Vilas Kharat Chair: Dominik Slezak		
	14:40-16:00 (80 mins)	Session S5 (Summit) Chair: <i>Ryszard Janicki</i> Attribute Reduction and Feature Selection	Session A5 (Assiniboine) Chair: <i>Xiuyi Jia</i> Intelligent Systems and Applications (III)	Session B5 (Black Bear) Chair: <i>Huaxiong Li</i> Decision-Theoretic Rough Set Model
	16:00-16:20	Coffee Break (Alpine Meadows)		
16:20-17:50	Panel Discussion & Closing Ceremony (Summit)		Chair: Andrzej Skowron	
	18:00-22:00	Banquet(Glacier Salon)		

The 6th International Conference on Rough Sets and Knowledge Technology (RSKT 2011)

Program

Sunday, October 9

Reception (Lynx Salon, 6:30-9:00pm)

Monday, October 10

Opening Ceremony (Summit, 8:30 - 9:00am)

Chair: JingTao Yao

Keynote Speeches (Summit, 9:00 - 10:20)

Session Chair: Sheela Ramanna, Guoyin Wang

Prof. Witold Pedrycz, Towards Designing Human Centric Systems: A New View at System Modeling With Granular Membership Grades

Prof. Jiye Liang, Uncertainty and Feature Selection in Rough Set Theory
(Presented by **Prof. Yiyu Yao**)

Coffee Break (Alpine Meadows, 10:20 - 10:50)

Session S1 (Summit): Generalized Rough Set Models

Session Chair: Jerzy Blaszczynski

Session Time: 10:50 - 12:30

- Dominance-Based Rough Set Approach on Pairwise Comparison Tables to Decision Involving Multiple Decision Makers 126
Salvatore Greco, Benedetto Matarazzo, and Roman Slowinski
- Generalized Parameterized Approximations 136
Jerzy W. Grzymala-Busse
- Transversal and Function Matroidal Structures of Covering-Based Rough Sets 146
Shiping Wang, William Zhu, and Fan Min
- Neighborhood Rough Sets Based Matrix Approach for Calculation of the Approximations..... 166
Junbo Zhang, Tianrui Li, Yan Yang, and Lei Wang
- Some Fuzzy Topologies Induced by Rough Fuzzy Sets..... 156
Wei-Zhi Wu, Yu-Fang Yang, and You-Hong Xu

Session A1 (Assiniboine): Workshop: Advances in Granular Computing 2011 (I)

Session Chair: Pawan Lingras

Session Time: 10:50 - 12:30

- Granular-Based Partial Periodic Pattern Discovery over Time Series Data 706
Aibao Luo, Xiuyi Jia, Lin Shang, Yang Gao, and Yubin Yang
- Approximations of Functions: Toward Rough Granular 712
Andrzej Skowron and Jaros law Stepaniuk
- Top-Down Progressive Computing 734
Yiyu Yao and Jigang Luo
- Bipartite Graphs and Coverings..... 722
Shiping Wang, William Zhu, and Fan Min
- Least Absolute Deviation Cut..... 743
Jian Yu and Liping Jing

Session B1 (Black Bear): Special Session: Rough Sets in Process Mining

Session Chair: Krzysztof Pancerz

Session Time: 10:50 - 12:30

- Probabilistic Similarity-Based Reduct..... 610
Wojciech Froelich and Alicja Wakulicz-Deja (Presenter: Roman Simiński)
- Inference Processes in Decision Support Systems with Incomplete Knowledge 616
Alicja Wakulicz-Deja, Agnieszka Nowak-Brzezinska, and Tomasz Jach
- Synthesis of Synchronized Concurrent Systems Specified by Information Systems 626
Zbigniew Suraj and Krzysztof Pancerz
- Efficiency of Complex Data Clustering 636
Alicja Wakulicz-Deja, Agnieszka Nowak-Brzezinska, and Tomasz Xieski
- *A New Method for Inconsistent Multicriteria Classification 600
Weibin Deng, Guoyin Wang, Shuangxia Yang, and Feng Hu (Presenter: Hong Yu)

Lunch Break (12:30 - 14:00)

Session S2 (Summit): Attribute Reduction and Feature Selection

Session Chair: Tianrui Li

Session Time: 14:00 - 15:40

- Rule-Based Estimation of Attribute Relevance 36
Jerzy Blaszczynski, Roman Slowinski, and Robert Susmaga
- Applications of Approximate Reducts to the Feature Selection Problem 45
Andrzej Janusz and Sebastian Stawicki
- Dependence and Algebraic Structure of Formal Contexts 51
Tong-Jun Li, Ying-Xue Wu, and Xiaoping Yang
- Optimal Sub-Reducts with Test Cost Constraint 57
Fan Min and William Zhu
- An Efficient Fuzzy-Rough Attribute Reduction Approach 63
Yuhua Qian, Chao Li, and Jiye Liang

Session A2 (Assiniboine): Workshop: Advances in Granular Computing 2011(II)

Session Chair: Yiyu Yao

Session Time: 14:00 - 15:40

- *Hierarchical Qualitative Inference Model with Substructures..... 753
Zehua Zhang, Duoqian Miao, and Jin Qian
- Text Clustering Based on Granular Computing and Wikipedia 679
Liping Jing and Jian Yu
- Comparing Clustering Schemes at Two Levels of Granularity for Mobile Call Mining..... 696
Pawan Lingras, Parag Bhalchandra, Satish Mekewad, Ravindra Rathod, and Santosh Khamitkar
- The Extraction Method of DNA Microarray Features Based on Experimental A Statistics 642
Piotr Artiemjew
- Knowledge Acquisition in Inconsistent Multi-scale Decision Systems 669
Shen-Ming Gu and Wei-Zhi Wu

Session B2 (Black Bear): Special session: Near Sets

Session Chair: Marcin Wolski and Christopher Henry

Session Time: 14:00 - 15:40

- Parallel Computation in Finding Near Neighbourhoods 523
Christopher J. Henry and Sheela Ramanna
- ε -Near Collections 533
James F. Peters and Maciej Borkowski
- Nearness of Subtly Different Digital Images..... 543
Leszek Puzio and James F. Peters (Presenter: Sheela Ramanna)
- A Generalization of Near Set Model 553
Lidong Wang, Xiaodong Liu, and Xiaojuan Tian
- Gauges, Pregauges and Completions: Some Theoretical Aspects of Near and Rough Set Approaches to Data..... 559
Marcin Wolski

Coffee Break (Alpine Meadows, 15:40 - 16:10)

Session S3 (Summit): Machine Learning with Rough and Hybrid Techniques

Session Chair: Jian Yu

Session Time: 16:10 - 17:50

- Constructing an Optimal Decision Tree for FAST Corner Point Detection 187
Abdulaziz Alkhalid, Igor Chikalov, and Mikhail Moshkov
- An Extension to Rough c-Means Clustering 208
Fan Li and Qihe Liu (Presenter: Fan Min)
- Towards a Practical Approach to Discover Internal Dependencies in Rule-Based Knowledge Bases..... 232
Roman Siminski, Agnieszka Nowak-Brzezinska, Tomasz Jach, and Tomasz Xieski
- A NIS-Apriori Based Rule Generator in Prolog and Its Functionality for Table Data..... 226
Hiroshi Sakai, Michinori Nakata, and Dominik Slezak
- *A Modified Cop-Kmeans Algorithm Based on Sequenced Cannot-Link Set 217
Tonny Rutayisire, Yan Yang, Chao Lin, and Jinyuan Zhang

Session A3 (Assiniboine): Workshop: Advances in Granular Computing 2011(III) and Quotient Space

Session Chair: Yanping Zhang

Session Time: 16:10 - 17:50

- The Optimal Approximation of Fuzzy Tolerance Relation591
Ling Zhang, Yan-ping Zhang, and Shu Zhao
- A Minimal Test Suite Generation Method Based on Quotient Space Theory579
Lei Wu and Longshu Li
- Audio Signal Blind Deconvolution Based on the Quotient Space Hierarchical Theory585
Chao Zhang, Yuan Zhang, and Xiao-pei Wu
- Path Queries on Massive Graphs Based on Multi-granular Graph Partitioning569
Fu-gui He, Yan-ping Zhang, Jie Chen, and Ling Zhang (presenter: Shu Zhao)

Session B3 (Black Bear): Intelligent Systems and Applications (I)

Session Chair: Masahiro Inuiguchi

Session Time: 16:10 - 17:50

- *Case-Based Reasoning Using Dominance-Based Decision Rules404
Marcin Szlag, Salvatore Greco, Jerzy Blaszczynski, and Roman Slowinski
- Information Reuse in Hospital Information Systems: A Similarity-Oriented Data Mining Approach382
Shusaku Tsumoto and Shoji Hirano(Presenter: Hidenao Abe)
- Accuracy Evaluation of the System of Type 1 Diabetes Prediction321
Rafa l Deja (Presenter: Andrzej Skowron)
- Ant Based Clustering of MMPI Data - An Experimental Study366
Krzysztof Pancierz, Arkadiusz Lewicki, Ryszard Tadeusiewicz, and Jerzy Gomula

Tuesday, October 11

Keynote Speeches (Summit, 9:00 - 10:20am)

Session Chair: Zbigniew Suraj, Roman Slowinski

Prof. James F. Peters, Sufficiently Near Sets of Neighbourhoods

Prof. Jerzy W. Grzymala-Busse, Mining Incomplete Data—A Rough Set Approach

Coffee Break (Alpine Meadows, 10:20 - 10:50)

Session S4 (Summit): Knowledge Technology

Session Chair: Hidenao Abe

Session Time: 10:50 - 12:30

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- GTrust: A Distributed Trust Model in Multi-Agent Systems Based on Grey System Theory274
Lijian He, Houkuan Huang, and Xingye Dong
- Remarks on Pairwise Comparison Numerical and Non-numerical Rankings290
Ryszard Janicki and Yun Zhai

- Community-Based Relational Markov Networks in Complex Networks 301
Huaiyu Wan, Youfang Lin, Caiyan Jia, and Houkuan Huang
- Comparing a Clustering Density Criteria of Temporal Patterns of Terms Obtained by Different Feature Sets 248
Hidenao Abe and Shusaku Tsumoto

Session A4 (Assiniboine): Intelligent Systems and Applications (II)

Session Chair: Fan Min

Session Time: 10:50 - 12:30

- Fuzzy Description of Air Quality: A Case Study 420
Jyoti Y. Yadav, Vilas Kharat, and Ashok Deshpande
- A Robust Face Recognition Method Based on AdaBoost, EHMM and Sample Perturbation 428
Yong Yang, Kan Tian, and Zhengrong Chen (Presenter: Hong Yu)
- RoSetOn: The Open Project for Ontology of Rough Sets and Related Fields..... 414
Zbigniew Suraj and Piotr Grochowalski
- Clustering of Rough Set Related Documents with Use of Knowledge from Dbpedia 394
Marcin Szczuka, Andrzej Janusz, and Kamil Herba
- Linear Necessity Measures and Their Applications to Possibilistic Linear Programming..... 280
Masahiro Inuiguchi, Tatsuya Higuchi, and Masayo Tsurumi

Session B4 (Black Bear): Special Session: Decision-Theoretic Rough Set Model

Session Chair: Hong Yu

Session Time: 10:50 - 12:30

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Joseph P. Herbert and JingTao Yao
- An Optimization Viewpoint of Decision-Theoretic Rough Set Model 457
Xiuyi Jia, Weiwei Li, Lin Shang, and Jiajun Chen
- Attribute Reduction in Decision-Theoretic Rough Set Model: A Further Investigation 466
Huaxiong Li, Xianzhong Zhou, Jiabao Zhao, and Dun Liu
- A New Discriminant Analysis Approach under Decision-Theoretic Rough Sets 476
Dun Liu, Tianrui Li, and Decui Liang
- Construction of α -Decision Trees for Tables with Many-Valued Decisions..... 486
Mikhail Moshkov and Beata Zielosko

Lunch Break (12:30 - 14:00)

Invited Tutorial (Summit, 14:00 -14:40)

Session Chair: Dominik Slezak

Prof. Sarjerao Nimse, Pawan Lingras and Vilas Kharat

History of Set Theory and Its Extensions in the Context of Soft Computing

Session S5 (Summit): Attribute Reduction and Feature Selection

Session Chair: Ryszard Janicki

Session Time: 14:40 - 16:00

- Decision Rules for Decision Tables with Many-Valued Decisions..... 763
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- Rough-Set-Inspired Feature Subset Selection, Classifier Construction, and Rule Aggregation 81
Dominik Slezak and Sebastian Widz
- An Efficient Fuzzy Rough Approach for Feature Selection..... 95
Feifei Xu, Weiguo Pan, Lai Wei, and Haizhou Du(Presenter: Hong Yu)
- Partitions, Coverings, Reducts and Rule Learning in Rough Set Theory..... 101
Yiyu Yao and Rong Fu

Session A5 (Assiniboine): Intelligent Systems and Applications (III)

Session Chair: Xiuyi Jia

Session Time: 14:40 - 16:00

- A Model-Based Decision Support Tool Using Fuzzy Optimization for Climate Change..... 388
Omar S. Soliman, Aboul Ella Hassanien, Neveen Ghali, Nashwa El-Bendary, and Ruhul Sarker
- LEM2-Based Rule Induction from Data Tables with Imprecise Evaluations 201
Masahiro Inuiguchi, Masahiko Tsuji, Yoshifumi Kusunoki, and Masayo Tsurumi
- A Constructive Feature Induction Mechanism Founded on Evolutionary Strategies with Fitness Functions Generated on the Basis of Decision Trees..... 89
Mariusz Wrzesien, Wies law Paja, and Krzysztof Pancierz
- Driver Status Recognition by Neighborhood Covering Rules..... 327
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Session B5: Special Session: Decision-Theoretic Rough Set Model

Session Chair: Huaxiong Li

Session Time: 14:40 - 16:00

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- Automatically Determining the Number of Clusters Using Decision-Theoretic Rough Set..... 504
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- Discovering Patterns of Collaboration in Rough Set Research: Statistical and Graph-Theoretical Approach 238
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- *A New Formulation of Multi-category Decision-Theoretic Rough Sets..... 514
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Coffee Break (Alpine Meadows, 16:00 - 16:20)

Panel Discussion & Closing Ceremony (Summit, 16:20 - 17:50)

Chair: Andrzej Skowron

Banquet (Glacier Salon, 18:30 - 22:00)

Wednesday, October 12

Small group discussions/Social activities

8:00-13:00 Chartered bus to Lake Louise, Moraine Lake (if weather permits) or Lake Minnewanka; Banff Springs Hotel and Bow Falls (if time permits); Lunch will not be provided.

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Banff Park Lodge Floor Plan

